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Journal of Materials Chemistry C

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IN THIS ISSUE

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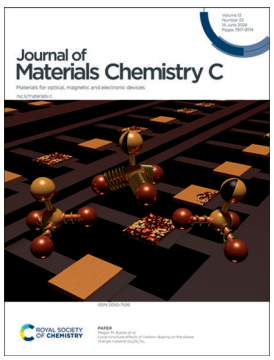

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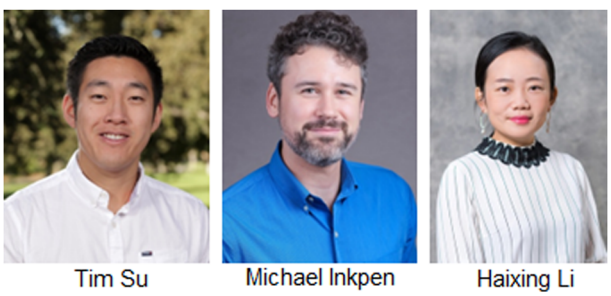
See Megan M. Butala *et al.*, pp. 7867–7877. Image reproduced by permission of John D. Langhout and Megan M. Butala from *J. Mater. Chem. C*, 2024, **12**, 7867.

EDITORIAL

7830

Themed collection on molecular scale electronics

Timothy A. Su,* Michael S. Inkpen* and Haixing Li*

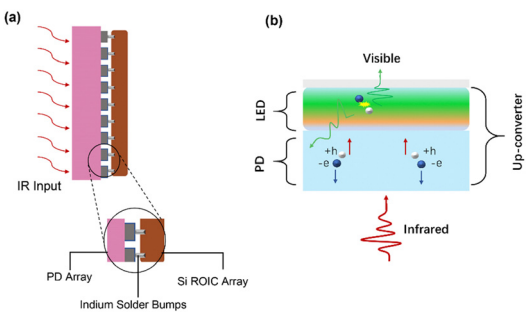


REVIEWS

7833

Optical up-conversion devices based on organic and inorganic quantum dot materials

Jing Xiao,* Zhaoyang Yin, Zhenyu Tang, Zhigang Gao, Lian Zhang and Jing Ren*



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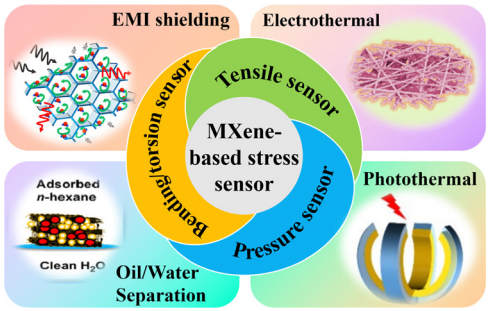
REVIEWS

7845

Advances in multifunctional flexible MXene-based stress sensors

Wenke Yang, Shun Liu, Yalong Wang, Hu Liu,* Chuntai Liu* and Changyu Shen

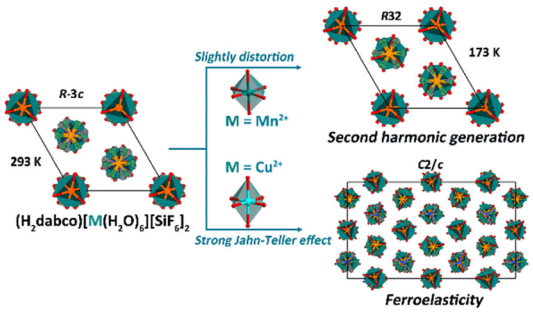


COMMUNICATION

7862

Metal ion-dependent structural phase transition and impact of the Jahn–Teller effect in two organic–inorganic hybrid compounds

Shi-Qing Yin, Yu-Qiao Tong, Qian-Jun Gu, Ya-Juan Li, Bo Huang* and Ai-Xin Zhu*

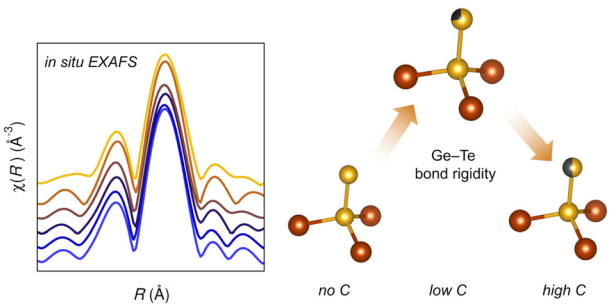


PAPERS

7867

Local structure effects of carbon-doping on the phase change material $Ge_2Sb_2Te_5$

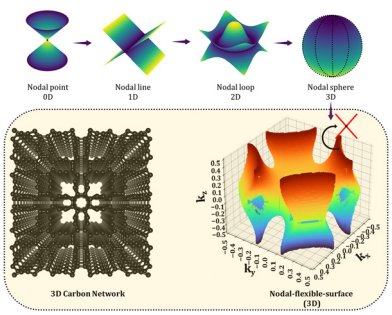
John D. Langhout, Danielle N. Alverson, Colton Ginter, Bruce Ravel, David P. Adams and Megan M. Butala*



7878

A nodal flexible-surface three-dimensional carbon network with potential applications as a lithium-ion battery anode material

Naga Venkateswara Rao Nulakani, Arka Bandyopadhyay and Mohamad Akbar Ali*



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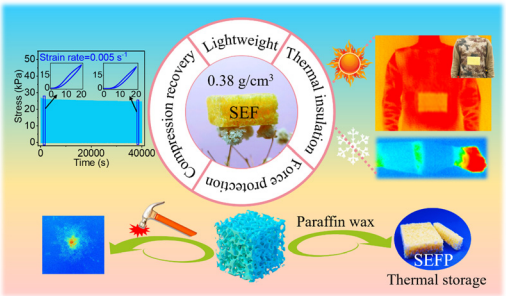
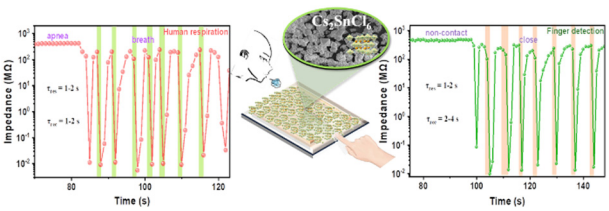
7891



A lightweight porous shear stiffening composite foam with excellent mechanical–thermal coupling protection performance

Tingting Xuan, Sheng Wang,* Shuai Liu, Wenhui Wang, Zimu Li, Yuan Hu and Xinglong Gong*

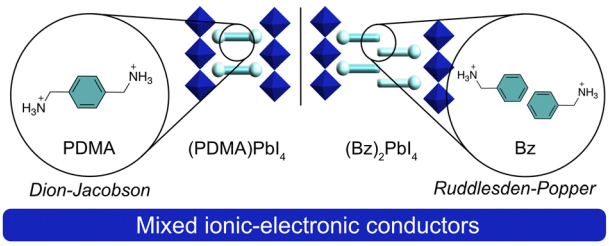
7901



Halide-dependent humidity sensing of Cs_2SnX_6 (X = Cl, Br, I) perovskites for real-time human physiological moisture detection

Chen-Chen Guo, Chao-Jie Wang, Le-Xi Zhang,* Qi-Da Qiu, Meng-Ya Zhu, Jing Yin and Li-Jian Bie*

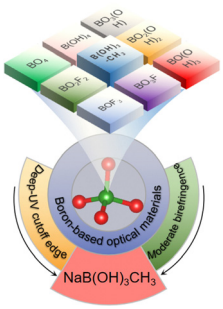
7909



Mixed ionic-electronic conduction in Ruddlesden–Popper and Dion–Jacobson layered hybrid perovskites with aromatic organic spacers

Algirdas Dučinskas, Mina Jung, Ya-Ru Wang, Jovana V. Milić,* Davide Moia,* Michael Grätzel* and Joachim Maier*

7916



$NaB(OH)_3CH_3$: a deep-ultraviolet optical crystal with unprecedented methyl-modified $[B(OH)_3CH_3]$ units

Chenhui Hu, Huimin Li, Jian Han,* Xueling Hou, Zhihua Yang and Shilie Pan*

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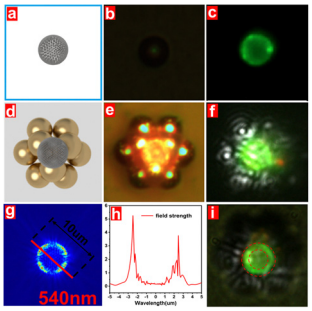
7921

Significant enhancement of the photon upconversion of a single fluorescent microsphere *via* annular near-field localization

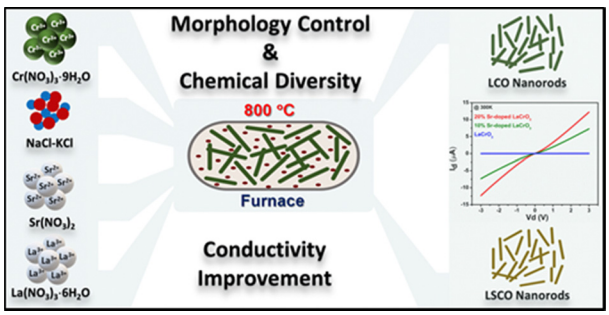
Chuangxin Wu, Jiujie Zeng, Guozheng Nie, Shiping Zhan,* Xiaofeng Wu and Yunxin Liu*



7927

Template-free molten salt synthesis of pure and Sr-doped $LaCrO_3$ 1D nanorods with enhanced electrical transport properties

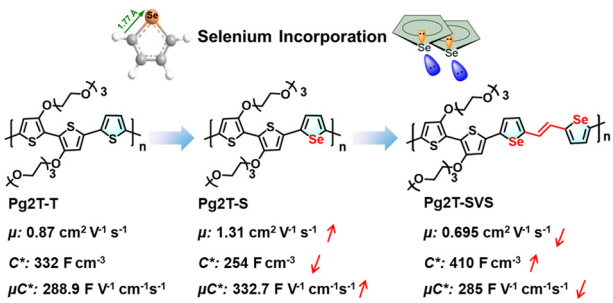
Kuldeep Kumar, Leela S. Panchakarla and Sanjog S. Nagarkar*



7935

Effects of selenium incorporation on the performance of polythiophene based organic electrochemical transistors

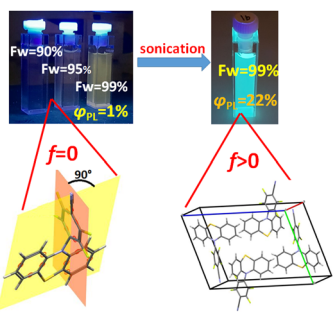
Meisi Li, Wang Feng, Yu Lan, Yimin Sun, Ping Li,* Jianfeng Li, Wanli Yang, Hongxiang Li, Junqiao Ding and Jianhua Chen*



7943

Sonocrystallization induced thermally activated delayed fluorescence *via* distortion of molecular geometry

Antonio Maggiore,* Yangyang Qu, Piotr Pander, Fernando B. Dias, Gilles Clavier, Regis Guillot, Davide Altamura, Cinzia Giannini, Vincenzo Maiorano, Pierre Audebert and Fabien Miomandre



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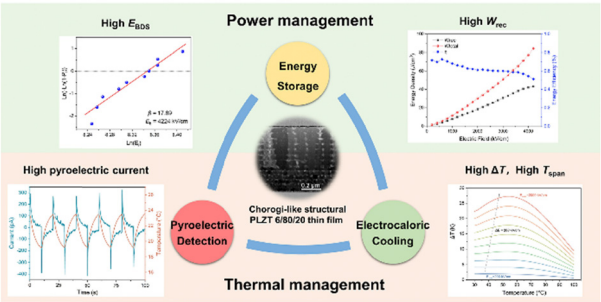
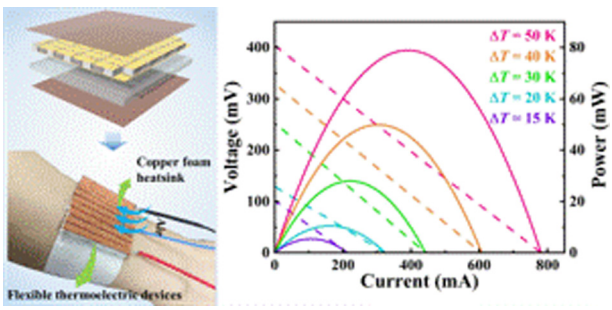
7956



A multifunctional oriented nanocrystalline $Pb_{0.91}La_{0.06}Zr_{0.8}Ti_{0.2}O_3$ relaxor ferroelectric thin film for chip power and thermal management

Yuxuan Hou, Junjie Li, Ruowei Yin, Xiaopo Su, Yanjing Su, Lijie Qiao, Chuanbao Liu, Qian Li and Yang Bai*

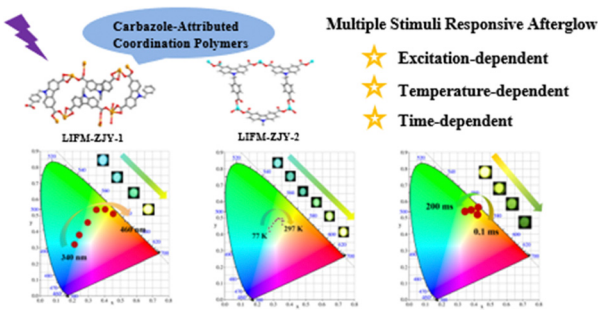
7966



High-performance flexible thermoelectric devices with a copper foam heatsink for personal thermal management

Wenjie Zhou, Kaikai Pang, Yuyou Zhang, Chuandong Zhou, Zongwei Zhang, Hao Yang, Qiang Zhang, Yanan Li, Haoyang Hu,* Xiaojian Tan,* Peng Sun, Jiehua Wu, Guoqiang Liu and Jun Jiang*

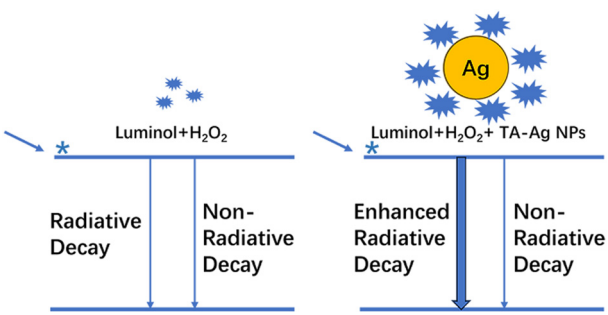
7974



Multiple stimuli responsive afterglow in carbazole-attributed coordination polymers

Jia-Yi Zhuang, Zhong-Hao Wang, Yan-Ting Huang, Qiang-Sheng Zhang and Mei Pan*

7981



Significant chemiluminescence enhancement by tannic acid functionalised plasmonic silver nanoparticles

Yao Lu, Jiamin Xu, D. Jason Riley and Fang Xie*

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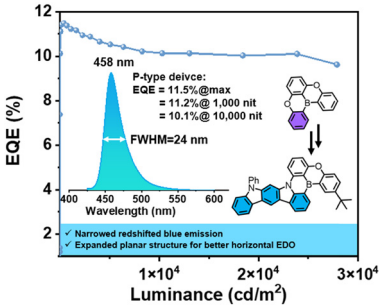
7989

A high-efficiency blue multiple resonance emitter with enhanced horizontal emitting dipole orientation based on indolocarbazole

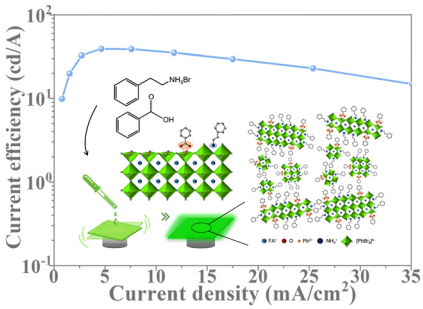
Tianjiao Fan, Qiwei Liu, Lian Duan and Dongdong Zhang*



7996

A dual ligand synergism strategy for fabrication of highly luminescent $FAPbBr_3$ nanocrystal films and efficient electroluminescent devices

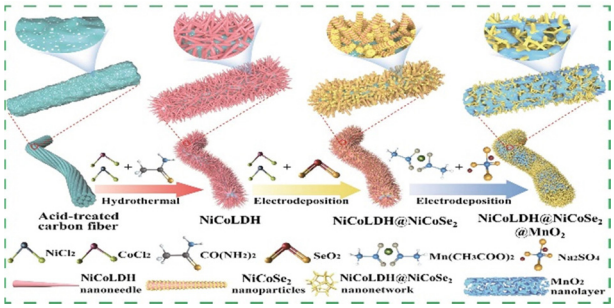
Cuihe Fan, Feng Zhang,* Zhengwei Cao, Jiaqi Liu and Yuying Hao*



8004

Alternately electrodeposited mesoporous $NiCoSe_2$@MnO_2 nanocomposite-anchored Ni–Co layered double hydroxide nanoneedles for hybrid supercapacitors

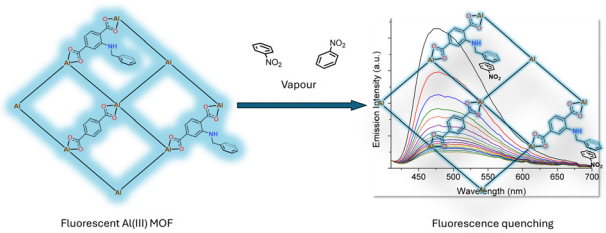
Fangqiao Wang, Zhibo Zhao, Xiaoguang Fu, Baobao Li, Zhuomin Chen, Senjing Wang, Qiaoling Huang, Qingchi Xu* and Meidan Ye*



8014

Functionalised Al(III) metal organic frameworks for fluorescence sensing of nitroaromatic vapours

Amina Haj-Yahya, Dimitra Kouskouki, Antigoni G. Margellou, Evangelos K. Andreou, Gerasimos S. Armatas and Theodore Lazarides*



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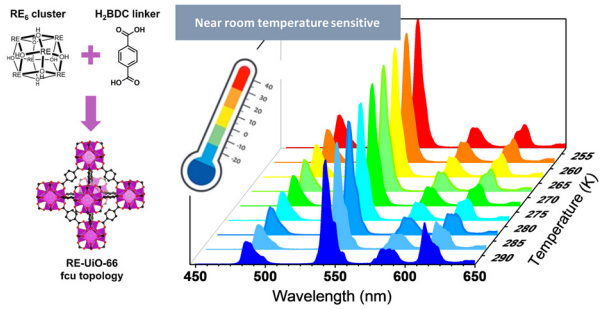
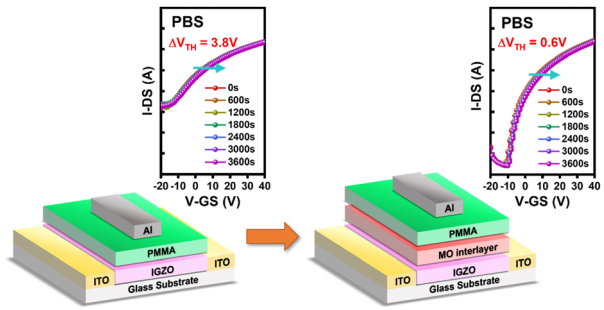


Rare-earth UiO-66 for temperature sensing near room temperature

Elias Djanffar, Hudson A. Bicalho, Zvart Ajoyan, Ashlee J. Howarth* and Hélène Serier-Brault*

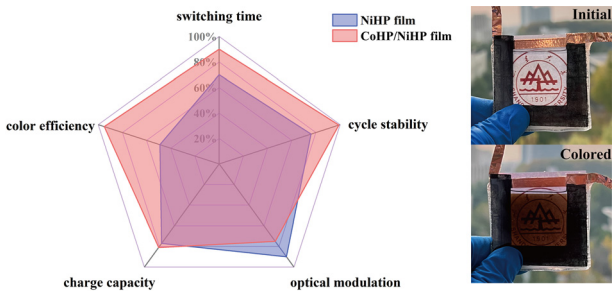
8030



A dual function metal oxide interlayer as an oxygen-defect inhibitor and a gate-leakage suppressor for a hysteresis-free, solution-processed top-gated IGZO TFT

Saravanan Kumaran, Bernice Karsten, Michael Zharnikov and Yian Tai*

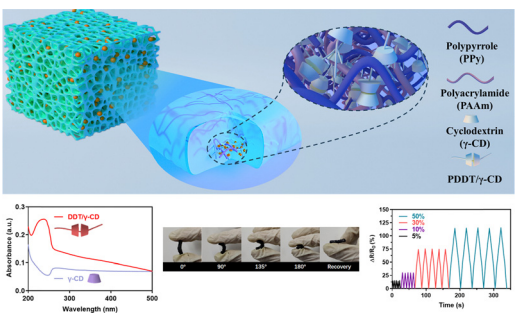
8042



Design of cobalt phosphate/nickel phosphate films with improved electrochromic performance

Xiaotong Chi, Dairong Chen, Ting Wang* and Xiuling Jiao*

8054



PPDA hybrid: a flexible and biocompatible platform for supercapacitor and strain sensing applications

Zhongwen Luo, Wenchao Ye, Feng Long, Wenlang Liang* and Yongxiang Leng

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PAPERS

8067

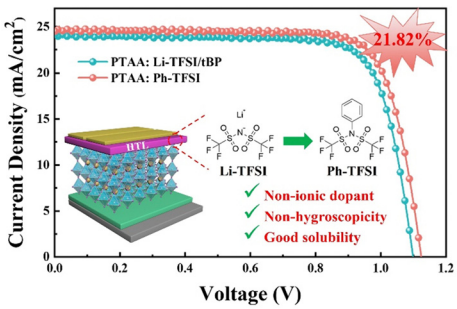
Quantum chemical studies of transition metal single-atom catalysts: exploration of catalytic descriptors

Bo Li, Mingyue Zheng, Shichen Lin, Feng Long Gu, Jun Jiang and Chuanyi Jia*

8078

Replacing Li^+ in Li-TFSI with a benzene ring: constructing non-ionic p-dopants for stable and efficient perovskite solar cells

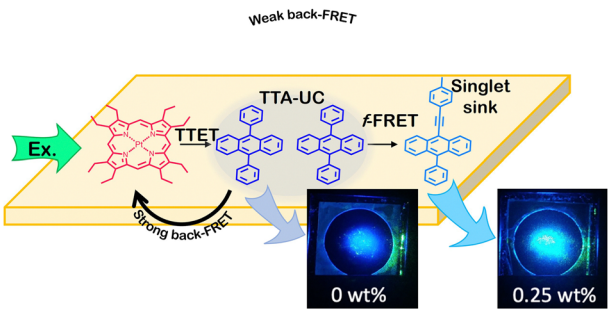
Zhongquan Wan,* Shaoliang Jiang, Hui Lu, Jinqing Zhu, Yuanxi Wang, Huaibiao Zeng, Haomiao Yin, Runmin Wei, Junsheng Luo* and Chunyang Jia*



8087

A rationally designed singlet sink for glassy polymeric photon upconverting films

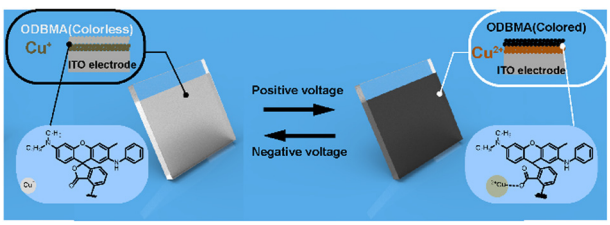
Sonia T. Stanciu, Steponas Raišys, Karolis Kazlauskas and Yoan C. Simon*



8098

A black electrochromic device based on a CuI film for energy-efficient applications

Ruipeng Shen, Yingai Li, Yu-Mo Zhang* and Sean Xiao-An Zhang*



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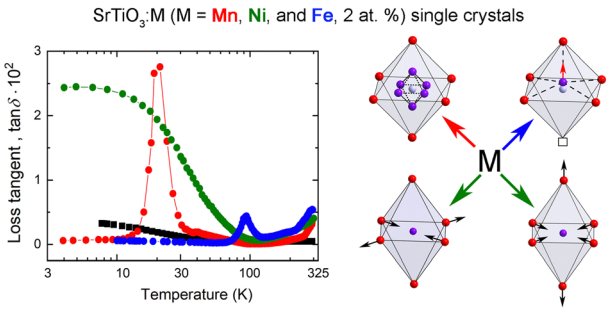
PAPERS

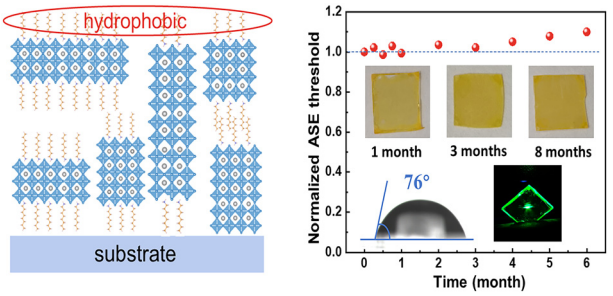
8105



Transition metal-doped $SrTiO_3$: when does a tiny chemical impact have such a great structural response?

Mikhail V. Talanov,* Adam I. Stash, Sergey A. Ivanov, Elena S. Zhukova, Boris. P. Gorshunov, Boris M. Nekrasov, Alexander V. Melentev, Vladislav I. Kozlov, Valery M. Cherepanov, Sergey Yu. Gavrilkin, Aleksey Yu. Tsvetkov, Ilya A. Zavidovskiy, Mikhail K. Tatmyshevskiy, Maxim Savinov, Valeriy M. Talanov and Alexander A. Bush

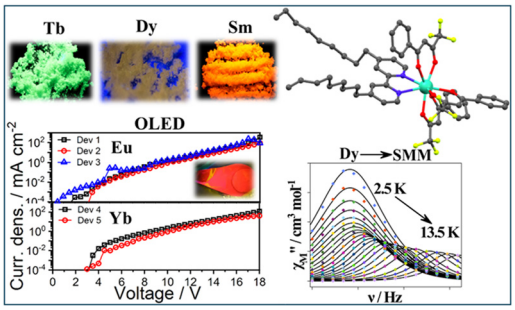
8119



Long-term air-stable amplified spontaneous emission in quasi-2D perovskite films through ligand engineering

Xiaofeng Chen,* Ji Qin, Xinyang Wang, Yanfei Shu, Ming Li, Ping Zhou, Guochao Lu* and Haiping He*

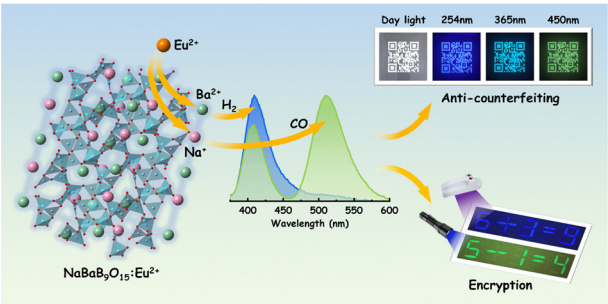
8127



Slow magnetic relaxation and luminescence properties in β-diketonate lanthanide(III) complexes. Preparation of Eu(III) and Yb(III) OLED devices

Ànnia Tubau, Laura Rodríguez, Piotr Pander, Lucy Weatherill, Fernando B. Dias, Mercè Font-Bardía and Ramon Vicente*

8145



Unlocking color-tunable emission of Eu^{2+}-activated phosphors through doping-free exploration of hidden sites

Dongkai Hu, Mavlanjan Rahman, Shuifu Liu, Lina Shen, Pengpeng Dai,* Dawei Wen* and Mingmei Wu*

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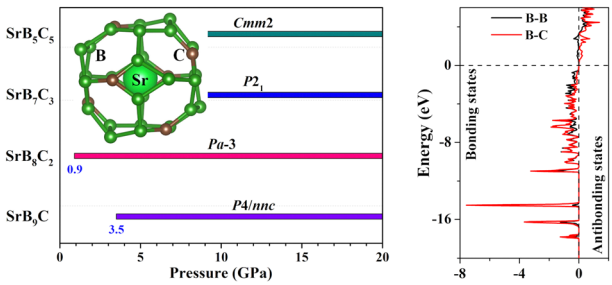
PAPERS

8153

Theoretical exploration of novel boron–carbon clathrate in $Sr(B,C)_{10}$ at high pressure

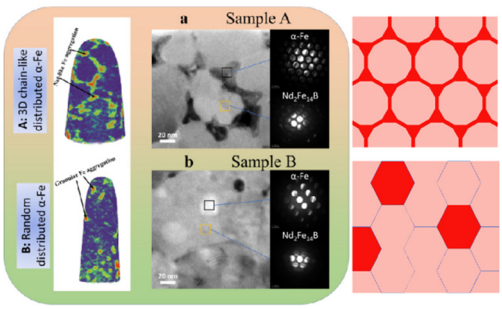
Dandan Zhang, Yangfan Cui, Miao Zhang,* Xin Chen* and Hui Wang*



8161

Matching the experimental chemical composition configuration and theoretical model in $Nd_2Fe_{14}B/\alpha$-Fe nanocomposites to improve coercivity

Yuqing Li, Jinjin Wang, Manying Liu, Xuerui Xu, Mengying Bian,* Weiqiang Liu, Dongtao Zhang, Hongguo Zhang and Ming Yue*



CORRECTION

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Correction: Tuning quantum interference through molecular junctions formed from cross-linked OPE-3 dimers

Bashayr Alanazi, Asma Alajmi, Alaa A. Al-Jobory, Colin Lambert and Ali Ismael*